

Claims

1. Method for cracking a hydrocarbon feed, comprising passing the feed, comprising a hydrocarbon and a diluent gas, in particular steam, through a
5 cracking coil in a firebox under cracking conditions, wherein the coil comprises at least one outlet section and at least one inlet section and wherein the outlet section of said coil is more thermally shielded than the inlet section of said coil.
2. Method according to claim 1, wherein the firebox comprises at least one
10 lane of outlet sections of the coils, at least two lanes of inlet sections of the coils and at least two lanes of burners, wherein the at least one lane of outlet sections is located between at the least two lanes of inlet sections and the lanes of inlet sections are located in between the at least two lanes of burners.
3. Method according to claim 1 or 2, wherein the coils are arranged
15 essentially vertical and essentially parallel to each other.
4. Method according to any one of the preceding claims, wherein the feed is passed through the coils in a parallel flow in at least part of the coils.
5. Method according to any one of the preceding claims, wherein the
20 hydrocarbon feed including diluent gas (steam) is heated to a temperature above the vapourisation temperature prior to entering the cracking coil or in the cracking coil.
6. Method according to any one of the preceding claims, wherein the feed comprises a hydrocarbon selected from the group consisting of ethane, propane, butanes, naphthas, kerosenes, atmospheric gasoils, vacuum
25 gasoils, heavy distillates, hydrogenated gasoils, gas condensates and mixtures thereof.
7. Method according to any one of the preceding claims, wherein at least one product is formed selected from the group consisting of ethylene, propylene and butadiene.

8. Cracking furnace, for steam cracking a hydrocarbon feed, comprising a firebox provided with a plurality of cracking coils, said firebox comprising at least one lane of outlet sections of the coils, at least two lanes of inlet sections of the coils and at least two lanes of burners, wherein the at least one lane of outlet sections is located between at the least two lanes of inlet sections and the lanes of inlet sections are located in between the at least two lanes of burners.
9. Cracking furnace according to claim 8, wherein the lanes are essentially parallel to each other.
10. Cracking furnace according to claim 8 or 9, wherein the outlet sections and the inlet sections are positioned essentially vertically, at least during use.
11. Cracking furnace according to any of the claims 8-10 wherein the inlet sections respectively outlet sections in a lane are arranged in an inline or staggered arrangement viz a viz each other and in a staggered configuration with respect to outlet sections respectively inlet sections present in the adjacent parallel lane or lanes of outlet sections respectively inlet sections.
12. Cracking furnace according to claim 11, wherein, the arrangement of the sections is in an equilateral triangular pitch, a isosceles triangular pitch, a right angled triangular pitch or a scalene triangular pitch.
13. Cracking furnace according to claim 12, wherein the tubes are unguided to the bottom.
14. Cracking furnace according to any of the claims 8 to 13, wherein at least a number of the burners are positioned at the floor and/or the roof of the firebox and/or the side walls of the box and wherein the outlets of the coils extend through the roof of the firebox.
15. Cracking furnace according to any one of the claims 8-14, wherein at least part of the cracking coils, are arranged in a arrangement allowing parallel flow of the feed through each of the coils, during use.
16. Cracking furnace according to any one of the claims 8-15, wherein the coils are selected from

- coils comprising two inlet sections arranged to allow parallel flow during use and one outlet section in fluid communication with the inlet sections; and
 - coils comprising four inlet sections arranged to allow parallel flow during use and one outlet section in fluid communication with the inlet sections.
- 5 17. Cracking furnace according to any one of the claims 8-16, wherein the outlet sections are arranged in an in-line configuration or a staggered configuration, and wherein the pitch/outside diameter is selected in the range of 1.5 to 10, preferably in the range of 2 to 6.
- 10 18. Method for cracking a hydrocarbon, optionally a method according to any one of the claims 1-7, wherein a cracking furnace according to any one of the claim 8-17 is used.